

CLAIMS

1. A transducer for detecting movement of an article mounted for movement in a plane, the transducer comprising: a heater
5 facing the plane of movement of the article and having a temperature dependent resistance; and, an edge defined in the article between regions of different thermal conductivity; wherein, as the article describes the movement, the edge moves relative to the heater producing a corresponding variation in
10 heat loss from the heater and a corresponding variation in resistance of the heater.
2. A transducer as claimed in claim 1, wherein the article is mounted for translational movement in the plane.
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3. A transducer as claimed in claim 2, wherein the edge is located in a plane surface of the article.
4. A transducer as claimed in claim 3, wherein the edge is
20 rectilinear.
5. A transducer as claimed in claim 4, wherein the heater comprises an elongate body overlapping and extending parallel to the plane surface and perpendicular to the edge.
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6. A transducer as claimed in claim 5, wherein the elongate body comprises a silicon cantilever having a doped resistive region formed therein.
- 30 7. A transducer as claimed in claim 5 or claim 6, wherein the edge is located on the periphery of the plane surface.
8. A transducer as claimed in claim 5 or claim 6, wherein the edge is formed as a step in the plane surface.

9. A movement detection system for detecting movement of an article mounted for movement in a plane, the system comprising: first and second transducers as claimed in any of claims 5 to 8
5 operative in opposite directions along a common axis of movement of the article in the plane.

10. A movement detection system as claimed in claim 9, wherein the first and second transducers respectively face first and
10 second parallel edges of the surface.

11. A movement detection system for detecting movement of an article mounted for movement in a plane, the system comprising: first and second transducers as claimed in any of claims 5 to 8
15 operative in orthogonal directions of movement of the article in the plane.

12. A movement detection system as claimed in claim 11, wherein the first and second transducers respectively face first and
20 second orthogonal edges of the surface.

13. A local probe storage device comprising: storage surface, local probe storage array having a plurality of tips facing the storage surface; a scanner for moving the storage surface
25 relative to the array in a plane parallel to the array; and a movement detection system as claimed in any of claims 9 to 12 for detecting movement of the storage surface relative to the array.

30 14. A transducer as claimed in claim 1, wherein the surface is mounted for rotational movement parallel to the heater about an axis of rotation.

15. A transducer as claimed in claim 14, wherein the edge is in the form of a side of a slot formed in the surface and extending radially from the axis of the rotation.

5 16. A transducer as claimed in claim 14, wherein the surface comprises a spoke extending radially from the axis of rotation and the edge comprises a side of the spoke.

17. A method for detecting movement of an article mounted for
10 movement in a plane, the method comprising: locating a heater having a temperature dependent resistance to face the plane of movement of the article; defining an edge in the article between regions of different thermal conductivity; and, detecting
15 variation in resistance of the heater corresponding to variation in heat loss from the heater as the edge moves relative to heater during movement of the article in the plane.